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The Genus *Teucrium* in the Eastern United States

BY EUGENE P. BICKNELL

Here and there along the shores of the Hudson near New York, grows a germander with palest pink flowers. The plant has long been familiar to me and, in accordance with established usage, I have always known it as the *Teucrium Canadense* of Linnaeus—the single species of the genus credited generally to the eastern states.

In Maine, some years ago, the same plant was found growing in abundance on stony shores back of the beaches both along the ocean and about the mouth of the York River. Here, however, there occurred with it at several places a somewhat stouter plant having rose-purple flowers which, although greatly resembling the other was obviously not the same.

An added interest came into the matter when, upon the occasion of a joint field meeting of the Philadelphia and New York botanical societies in Bucks County, Pennsylvania, on July 4, 1899, a germander just in flower along the shores of the Delaware River was readily seen to be different from the two which had been previously met with; and even more interesting was the receipt of specimens collected on the shores of Lake Champlain by Mr. W. W. Eggleston which again it was impossible to correlate satisfactorily with anything before seen.

An examination of the herbaria of the New York Botanical Garden and Columbia University showed that the mass of eastern specimens could be readily sorted into two series, one representing a coastwise plant, that of the Hudson River—the other being the plant of the Delaware and showing it to be our commonest and most generally distributed species. In these considerable collections the brighter-flowered Maine plant was quite unrepresented and the Champlain plant only by a few examples mostly from the same localities from which I had already received it. In addition two specimens from Michigan possessing characters not shared by any of the others were especially noteworthy, as well as a typical ex-

ample of *T. occidentale* Gray from as far east as Lake Ontario. A detailed study of the whole subject gave the very unexpected result that six species instead of two are to be credited to our eastern flora.

In these circumstances it becomes necessary before pursuing the subject further to inquire into the exact significance of the Linnaean names *T. Canadense* and *T. Virginicum*, both applied to plants of the Eastern United States. In *Species Plantarum* we find that the former species was based primarily on the *Chamaedrys Canadensis* of Tournefort and that under it a specimen of Gronovius' is also cited, but with a mark of doubt. The *T. Virginicum* was based alone on a Gronovian species.

When in London three years ago, Professor Underwood kindly undertook to look into the matter of the Linnaean types. The specimen underlying *T. Virginicum* was searched for with the assistance of Mr. Britten both in the British Museum and at the Linnaean Society rooms; it was not to be found and is probably not now in existence.

The specimen doubtfully cited by Linnaeus under his *T. Canadense* was, however, brought to light at the British Museum. It proved to be "wholly unsatisfactory" and was regarded both by Mr. Britten and Professor Underwood as a pathological plant. However, from the careful notes and sketches of the leaves made by Professor Underwood I have little doubt that the specimen is actually our common coastwise plant. On the other hand Tournefort's description of his *Chamaedrys Canadensis*, the actual type of the Linnaean species, although unsatisfactory, points with reasonable certainty to our common inland species; his words "*urtice folio subtus incano*" apply with ready appropriateness to this plant while scarcely to be suggested by the narrow-leaved coast form. The name *T. Canadense*, therefore, while not wholly free from uncertainty now that six species present themselves, may fairly be retained for our more inland plant, and fortunately so since this species being the most widely distributed and commonest of all may be accepted as the one for which the name has been more especially used.

As to *T. Virginicum* of Linnaeus the evidence deducible from the words of Gronovius, all that remains to us, allows scarcely a

doubt that it was nothing else than the *Chamaedrys Canadense* of Tournefort and that therefore the name *T. Virginicum* L. has quite properly been considered a synonym of *T. Canadense* L. At the same time it is fairly clear that Gronovius recognized both of our most common species, a discrimination of nearly two hundred years ago which has remained unverified to the present day.

But a further interest attaches to Linnaeus' treatment of his *T. Canadense*. In his remarks touching it he refers descriptively to a plant from "Canada" and also to one which he had in cultivation. The latter, again, can scarcely be other than his *T. Virginicum*, but the former by the clearest indications of probability was the Lake Champlain species of which I have spoken and which is perfectly distinct from the species with which Linnaeus associated it. Therefore of the six species now to be recognized it appears that two only have ever received distinctive names.

TEUCRIUM CANADENSE L. Common Germander

Erect, from .5 to over 1 dm. high, simple or above with several flowering spikes : stem and inflorescence closely canescent-pubescent : leaves rather thin, ovate to ovate-oblong or narrower, rounded or rarely subcordate at base, acute or acuminate at apex, 6-14 cm. long, 2.5-5 cm. wide, closely and often irregularly dentate-serrate, above green and thinly appressed-hirsutulous to glabrate, hoary-pubescent beneath, the canescent petioles 5-12 mm. long or shorter on the upper leaves : calyx often purplish, canescent, 5-7 mm. long, turbinate, the upper teeth acute or obtuse, the lower pair slightly longer, triangular-subulate : bracts mostly not surpassing the mature calyx : spikes dense : corolla pink, 15-20 mm. long, the outer surface minutely glandular-puberulent.

Western New England to Georgia and southern Texas, west to Arkansas. Low grounds and river shores, June-July.

NEW YORK : ex Herb. Torrey ; Head of Seneca Lake, Gray.

PENNSYLVANIA : Point Pleasant, E. P. B. ; Nockamixon Rocks, H. H. Rusby ; Sayre, W. C. Barbour ; Easton, A. A. Tyler.

OHIO : Columbus, N. L. Britton.

WEST VIRGINIA : Ripley, C. F. Millspaugh ; Bayard, C. F. M.

NORTH CAROLINA : Biltmore.

SOUTH CAROLINA : Pickens County.

GEORGIA : Macon, J. K. Small.

TENNESSEE : Henderson, S. M. Bain ; Knoxville, A. Ruth.

KENTUCKY : C. W. Short, M.D. ; Lexington, R. Peter.

MISSOURI : Watson, B. F. Bush.

ARKANSAS : Dr. Pitcher.

KANSAS : Ft. Riley, E. E. Gayle, J. B. Norton.

INDIAN TERRITORY : Dr. Edward Palmer.

TEXAS : Kerryville, A. A. Heller.

MEXICO : Sonora, Geo. Thurber, no. 698, probably var. *angustifolium* Gray.

ARIZONA : Tucson, C. G. Pringle, probably var. *angustifolium* Gray.

NEBRASKA : Mead, P. A. Rydberg.

IOWA : Debora, E. W. D. Holway.

WISCONSIN : Milwaukee, Dr. H. E. Hasse.

Teucrium littorale sp. nov. Coast Germander

Pale and canescent, 30–50 cm. high, erect or assurgent, often with ascending branches : leaves thickish and rugose-veiny, narrowly oblong or sometimes broader, narrowed into the petiole, acute or obtusely pointed, closely fine-serrate or becoming unequally somewhat dentate-serrate, 6–11 cm. long, 1.5–4 cm. wide, when dry the upper surface minutely papillose-roughened beneath the soft appressed pubescence ; petioles 5–10 mm. long : spikes narrow, often interrupted ; bracts about the length of the calyx : calyx small, 4–5 mm. high, becoming somewhat gibbous-urceolate, the teeth short, the upper ones obtuse : corolla pale pink, about 15 mm. long, loosely pilose without.

On or near the coast, Maine to Florida, July–August.

MAINE : York Harbor, Aug. 26, 1896, E. P. B. Type, in Herb. N. Y. Bot. Gard.

MASSACHUSETTS : Nantucket, E. P. B.

NEW YORK : Ft. Washington, E. P. B. ; Long Island, ex Herb. Torrey, Sag Harbor, N. L. Britton.

MARYLAND : Stocton, H. H. Rusby.

VIRGINIA : Norfolk, N. L. Britton, A. A. Heller.

SOUTH CAROLINA : Charleston, L. R. Gibbes.

FLORIDA : Chapman ; Duval Co., L. H. Lighthipe ; Jacksonville, A. H. Curtiss.

Teucrium roseum sp. nov. Maine Germander

Rather stout and deep green, 30–70 cm. high, the stem soft pubescent or downwardly villous, often with ascending branches

above: leaves short-oblong or oblong-ovate, cuneate at base, acute or acuminate at apex, irregularly dentate-serrate or somewhat cut-serrate with numerous subspreading teeth, more or less densely hoary-tomentose beneath, softly pilose-pubescent above, 6-9 cm. long, 2.5-4.5 cm. wide, the slender petioles hoary-pubescent, 10-15 mm. long: inflorescence hoary-villose: calyx often purplish, 5-7 mm. long, the upper tooth acute, the lateral ones obtuse, the lower pair but little longer, triangular-subulate; pedicels very short: bracts usually longer than the calyx, ciliate-fringed: corolla rose-purple, somewhat smaller than in *T. littorale* and less exerted, more or less pilose-bearded.

Coast of Maine, August-September, York Harbor, Aug. 18, 1896, E. P. B. Type in Herb. N. Y. Bot. Gard. Mt. Desert, Aug. 19, 1897. E. P. B.

TEUCRIUM OCCIDENTALE Gray. Western Germander

From 30-80 cm. high, becoming erectly branched above, the dense narrow spikes either short or flexuously elongated: stem and petioles villous-hirsute with spreading or recurved hairs, the inflorescence densely hirsute and viscid-glandular; leaves ovate-oblong, narrower or broader, 4-9 cm. long, 1.5-3 cm. wide, mostly rounded at base, acute and sharp-serrate, papillose-hirsute above, tomentulose or hirsute-pubescent beneath with spreading hairs on the larger veins, petioles 10-20 mm. long: bracts mostly shorter than the calyx: calyx often purple, 5 mm. long to the acute upper teeth, the elongated lower teeth more or less stiffly lanceolate-subulate: corolla pinkish-purple, 8-12 mm. long, tomentulose and glandular without.

Ontario and Missouri to California and British Columbia, August.

ONTARIO: Kingston, J. Fowler.

NEW YORK: Manitou Beach, Lake Ontario, N. L. Britton.

OHIO: Riddell, 1834.

MISSOURI: Jackson Co., B. F. Bush.

NEBRASKA: P. A. Rydberg.

IOWA: Armstrong, R. I. Cratty; Ames, L. H. Pammel and C. R. Ball.

COLORADO: Canyon City, Miss Alice Eastwood.

ARIZONA: Fort Apache, Mrs. R. W. Hoyt.

CALIFORNIA: Valley of the Sacramento, Wilkes Expedition, no. 1331.

BRITISH COLUMBIA: John Macoun.

Teucrium boreale sp. nov. Northern Germander

Erect or ascending, rather slender, often widely branched from the base, from 30 to 80 cm. or more tall: stem loosely pubescent with recurved hairs, especially on the angles, to glabrate, the inflorescence somewhat villous-pubescent, scarcely if at all glandular: spikes rather short or the terminal one elongated, often interrupted and somewhat flexuous: leaves thin or membranous, ovate-oblong to oblong-lanceolate, sometimes narrowly so, 5–10 cm. long, 2–3.5 cm. wide, acute at the apex, rounded or narrowed at the base, more or less regularly sharp-serrate to dentate-serrate, above minutely hispidulous puberulent, beneath thinly tomentulose, or sometimes glabrate throughout: petioles of the main leaves becoming 10–20 mm. long: bracts mostly shorter than the calyx, ciliate: calyx thin, campanulate, 4–5 mm. long, the subequal teeth short and broad, the lateral pair very obtuse: corolla purplish-pink, 12–15 mm. long, about three times the length of the calyx, loosely short-pubescent and dotted with minute glands, the terminal lobe broad.

New Hampshire to northern New York, August.

NEW HAMPSHIRE: Lyme, W. W. Eggleston.

VERMONT: Alburg Springs and Rutland, W. W. Eggleston; Burlington, Grant.

NEW YORK: West Point, ex-Herb. Torrey; Westminster Park, Miss E. Babcock. Type from Vermont, in Herb. N. Y. Bot. Garden.

Teucrium menthifolium sp. nov. Mint-leaved Germander

Sparsely hirsute-pubescent with recurved hairs to nearly glabrous except the inflorescence, smaller and less branched than *T. occidentale*, the denser spikes shorter, with the bracts often conspicuously elongated and foliaceous, the pubescence not viscid nor glandular: leaves firm and thickish, pale green, minutely pubescent to glabrate above, white-veiny and thinly tomentulose beneath, with longer hairs on the veins or glabrate, lanceolate or narrowly oblong, narrowed or contracted at the base, 5–9 cm. long, 2–3 cm. wide, acute or acuminate at the apex, somewhat regularly sharp-serrate: calyx 5–6 mm. long, narrowly campanulate, the teeth shorter and less rigid than in *T. occidentale*, the lateral obtuse, the lower pair only slightly longer: corolla pink, short, sometimes not twice the length of the calyx, thinly pubescent and glandular, the terminal lobe small, often not broader than the lateral ones.

CENTRAL MICHIGAN: Alma, July 17, 1890, August, 1892. Charles A. Davis. Type in Herb. Columbia.

Synopsis of the Species

Pubescence of stem more or less closely hoary.

Canescently short-pubescent : leaves ovate-oblong, rounded at base, the upper surface thinly hispidulous to glabrate : corolla pink, minutely glandular-puberulent.

1. *T. Canadense.*

Downy-canescient : leaves narrowly oblong or broader, the base narrowed, the upper surface soft-pubescent : corolla pale pink, loosely pilose.

2. *T. littorale.*

Soft-pubescent or downwardly villous : leaves oblong-ovate, cuneate at base, pubescent above : corolla rose-purple, pilose-bearded.

3. *T. roseum.*

Pubescence looser, of longer spreading or recurved-spreading hairs.

Pubescence usually dense and spreading, the inflorescence hirsute and glandular-viscid.

4. *T. occidentale.*

Pubescence shorter and sparser, the inflorescence not glandular-viscid or scarcely so.

Leaves thin, bracts short : corolla about three times the length of the calyx.

5. *T. boreale.*

Leaves firm, bracts often elongated : corolla about twice the length of the calyx.

6. *T. menthifolium.*